Vancouver Lake and Lake River Watershed

Description of the watershed

The Vancouver Lake and Lake River watershed is a 31-square-mile area on the western edge of Clark County. It is primarily within the Columbia River flood plain and includes surrounding hills that drain to the flood plain, Vancouver Lake, and Lake River.

At 4.5 square miles, Vancouver Lake is the largest lake contained entirely within Clark County. The water level in this relatively shallow lake rises and falls with the seasons. Since the lake is connected to the Columbia River, it also rises and falls with tidal fluctuations in the river. Normally, Vancouver Lake is between three to 12 feet deep. At its lowest levels, broad mudflats are exposed. Burnt Bridge Creek flows directly into Vancouver Lake.

Lake River is essentially a slow, flat slough of the Columbia River that originates in Vancouver Lake. It flows north on the east side of the Columbia River flood plain and into the Columbia River northwest of Ridgefield. Numerous streams, including Salmon, Whipple, and Flume creeks flow into Lake River along its 11-mile length. Tidal effects from the Columbia River can cause Lake River to flow in reverse, back toward Vancouver Lake.

Human activities to control flooding, claim wetlands for agriculture, and build industrial facilities in southwest Vancouver, have greatly altered Vancouver Lake and Lake River. The result is generally poor water quality conditions that include mud accumulations in the lake, severe algal blooms, and high water temperatures. In the 1980s, large restoration projects tried to reverse some of the damage caused by these earlier flood plain management strategies.

At the time of the first settlers in the area, Mulligan Slough directly connected Vancouver Lake to the Columbia River west of Vancouver. Before development on the flood plain, seasonal flooding and flow from the Columbia River through Mulligan Slough and Vancouver Lake probably kept Vancouver Lake fairly cool and clean and flushed away any accumulated sediment. After Mulligan Slough was filled, this flow or "flushing" was lost. Construction of dams on the Columbia and dikes around much of the Lake River and Vancouver Lake area eliminated flooding and allowed mud from Burnt Bridge Creek and Lake River to accumulate in the Lake.

In the 1970s, the Port of Vancouver proposed a project to partially restore the lake's health. The port built a "flushing" channel from the Columbia River into Lake River, dredged channels along the lake's edges to deepen the lake and improve water flow through it, and created an island for wildlife habitat. The project was completed in the early 1980s and resulted in some improvement, but not to the desired extent. The project underestimated the influence of flow from Salmon Creek and Lake River into Vancouver Lake and overestimated the influence of the flushing channel.

Although most of the Vancouver Lake and Lake River area is a wildlife refuge and farmland, most of the streams draining to these areas flow through urban, suburban, and rural areas.

Spawning salmon pass through Lake River and Vancouver Lake to reach Salmon, Whipple, and Burnt Bridge creeks. Young salmon must also pass back through on their way to the ocean. Lake River and Vancouver Lake support warm water fisheries such as bass, sunfish, and perch. The lake also serves as a salmon rearing area. The refuge areas support many types of wildlife including waterfowl and birds of prey.